



Safety Data Sheet

Copyright, 2017, 3M Company.

All rights reserved. Copying and/or downloading of this information for the purpose of properly utilizing 3M products is allowed provided that: (1) the information is copied in full with no changes unless prior written agreement is obtained from 3M, and (2) neither the copy nor the original is resold or otherwise distributed with the intention of earning a profit thereon.

Document group:	30-0260-7	Version number:	4.01
Issue Date:	12/09/2017	Supersedes date:	29/08/2017

This Safety Data Sheet has been prepared in accordance with the Preparation of Safety Data Sheets for Hazardous Chemicals Code of Practice (Safe Work Australia, December 2011)

SECTION 1: Identification

1.1. Product identifier

3M™ Fluorosurfactant FC-4430

Product Identification Numbers

98-0212-3628-0 98-0212-3629-8 98-0212-3630-6 98-0212-3670-2 AF-0194-2085-6

1.2. Recommended use and restrictions on use

Recommended use

Industrial use.

For Industrial or Professional use only.

1.3. Supplier's details

Address: 3M Australia - Building A, 1 Rivett Road, North Ryde NSW 2113
Telephone: 136 136
E Mail: productinfo.au@mmm.com
Website: www.3m.com.au

1.4. Emergency telephone number

EMERGENCY: 1800 097 146 (Australia only)

SECTION 2: Hazard identification

This product is classified as a hazardous chemical according to the Model Work Health and Safety Regulations, 2011, in accordance with applicable State and Territory legislation.

Refer to Section 14 of this Safety Data Sheets for product Dangerous Goods Classification.

2.1. Classification of the substance or mixture

Reproductive Toxicity: Category 1B.

2.2. Label elements

The label elements below were prepared in accordance with the Code of Practice on Preparation of Safety Data Sheets for Hazardous Chemicals (Safe Work Australia, December 2011). This information may be different from the actual product label.

Signal word
DANGER!

Symbols
Health Hazard |

Pictograms



Hazard statements

H360 May damage fertility or the unborn child.

Precautionary statements

Prevention:

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P281 Use personal protective equipment as required.

Response:

P308 + P313 IF exposed or concerned: Get medical advice/attention.

Storage:

P405 Store locked up.

Disposal:

P501 Dispose of contents/container in accordance with applicable local/regional/national/international regulations.

2.3. Other assigned/identified product hazards

None known.

2.4. Other hazards which do not result in classification

May be harmful if swallowed.

May be harmful in contact with skin.

Toxic to aquatic life with long lasting effects.

SECTION 3: Composition/information on ingredients

This material is a mixture.

Ingredient	CAS Nbr	% by Weight
2-Propenoic Acid, 2-[Methyl[(Nonafluorobutyl)Sulfonyl]Amino] Ethyl Ester, Telomer With Methyloxirane Polymer With Oxirane Di-2-Propenoate and Methyloxirane Polymer With Oxirane Mono-Propenoate	1017237-78-3	85 - 95
Polyether Polymer	Trade Secret	5 - 10
2-Methoxymethylethoxypropanol	34590-94-8	0 - 5

3M™ Fluorosurfactant FC-4430

1,1,2,2,3,3,4,4,4-Nonafluoro-N-(2-hydroxyethyl)-N-methylbutane-1-sulphonamide	34454-97-2	< 1
1-butanesulphonamide, 1,1,2,2,3,3,4,4,4-nonafluoro-N-methyl-	68298-12-4	< 1
2-[Methyl[(nonafluorobutyl)sulphonyl]amino]ethyl acrylate	67584-55-8	< 1
Toluene	108-88-3	< 1

SECTION 4: First aid measures**4.1. Description of first aid measures****Inhalation**

Remove person to fresh air. If you feel unwell, get medical attention.

Skin contact

Wash with soap and water. If you feel unwell, get medical attention.

Eye contact

Flush with large amounts of water. Remove contact lenses if easy to do. Continue rinsing. If signs/symptoms persist, get medical attention.

If swallowed

Rinse mouth. If you feel unwell, get medical attention.

4.2. Most important symptoms and effects, both acute and delayed

See Section 11.1. Information on toxicological effects.

4.3. Indication of any immediate medical attention and special treatment required

Not applicable

SECTION 5: Fire-fighting measures**5.1. Suitable extinguishing media**

In case of fire: Use a fire fighting agent suitable for ordinary combustible material such as water or foam to extinguish.

5.2. Special hazards arising from the substance or mixture

Exposure to extreme heat can give rise to thermal decomposition.

Hazardous Decomposition or By-Products**Substance**

Carbonyl fluoride.
Carbon monoxide.
Carbon dioxide.
Hydrogen Fluoride
Toxic vapour, gas, particulate.

Condition

During combustion.
During combustion.
During combustion.
During combustion.
During combustion.

5.3. Special protective actions for fire-fighters

When fire fighting conditions are severe and total thermal decomposition of the product is possible, wear full protective clothing, including helmet, self-contained, positive pressure or pressure demand breathing apparatus, tunic and trousers (leggings), bands around arms, waist and legs, face mask, and protective covering for exposed areas of the head.

Hazard Code: •3Z

SECTION 6: Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures**

Evacuate area. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapors, in accordance with good industrial hygiene practice. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

6.2. Environmental precautions

Avoid release to the environment. For larger spills, cover drains and build dykes to prevent entry into sewer systems or bodies of water.

6.3. Methods and material for containment and cleaning up

Contain spill. Working from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material. Mix in sufficient absorbent until it appears dry. Remember, adding an absorbent material does not remove a physical, health, or environmental hazard. Collect as much of the spilled material as possible. Place in a closed container approved for transportation by appropriate authorities. Clean up residue with water. Seal the container. Dispose of collected material as soon as possible in accordance with applicable local/regional/national/international regulations.

SECTION 7: Handling and storage**7.1. Precautions for safe handling**

Avoid inhalation of thermal decomposition products. Not intended for use as a medical device or drug. Do not use in a confined area with minimal air exchange. Do not handle until all safety precautions have been read and understood. Do not breathe dust/fume/gas/mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Avoid release to the environment. Use personal protective equipment (eg. gloves, respirators...) as required.

7.2. Conditions for safe storage including any incompatibilities

Store away from heat.

SECTION 8: Exposure controls/personal protection**8.1 Control parameters****Occupational exposure limits**

If a component is disclosed in section 3 but does not appear in the table below, an occupational exposure limit is not available for the component.

Ingredient	CAS Nbr	Agency	Limit type	Additional comments
Toluene	108-88-3	ACGIH	TWA:20 ppm	A4: Not class. as human carcin
Toluene	108-88-3	Australia OELs	TWA(8 hours):191 mg/m ³ (50 ppm);STEL(15 minutes):574 mg/m ³ (150 ppm)	SKIN
1,1,2,2,3,3,4,4,4-Nonafluoro-N-(2-hydroxyethyl)-N-methylbutane-1-sulphonamide	34454-97-2	Manufacturer determined	TWA:1 mg/m ³ (0.07 ppm)	SKIN
2-Methoxymethylethoxypropanol	34590-94-8	ACGIH	TWA:100 ppm;STEL:150 ppm	SKIN
2-Methoxymethylethoxypropanol	34590-94-8	Australia OELs	TWA(8 hours):308 mg/m ³ (50 ppm)	SKIN
1-butan Sulphonamide,	68298-12-4	Manufacturer	TWA:0.5 mg/m ³ (0.04 ppm)	SKIN

3M™ Fluorosurfactant FC-4430

1,1,2,2,3,3,4,4,4-nonafluoro-N-methyl-		determined		
--	--	------------	--	--

ACGIH : American Conference of Governmental Industrial Hygienists

AIHA : American Industrial Hygiene Association

Australia OELs : Australia. Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment

CMRG : Chemical Manufacturer's Recommended Guidelines

TWA: Time-Weighted-Average

STEL: Short Term Exposure Limit

CEIL: Ceiling

Sen: Sensitiser

Sk: Absorption through the skin may be a significant source of exposure.

8.2. Exposure controls

8.2.1. Engineering controls

Provide appropriate local exhaust when product is heated. For those situations where the material might be exposed to extreme overheating due to misuse or equipment failure, use with appropriate local exhaust ventilation sufficient to maintain levels of thermal decomposition products below their exposure guidelines. Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapours/spray. If ventilation is not adequate, use respiratory protection equipment.

8.2.2. Personal protective equipment (PPE)

Eye/face protection

Select and use eye/face protection to prevent contact based on the results of an exposure assessment. The following eye/face protection(s) are recommended:

Safety glasses with side shields.

Select and use eye protection in accordance with AS/NZS 1336. Eye protection should comply with the performance specifications of AS/NZS 1337.

Skin/hand protection

Select and use gloves and/or protective clothing approved to relevant local standards to prevent skin contact based on the results of an exposure assessment. Selection should be based on use factors such as exposure levels, concentration of the substance or mixture, frequency and duration, physical challenges such as temperature extremes, and other use conditions. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible gloves/protective clothing.

Gloves made from the following material(s) are recommended: Neoprene.

Nitrile rubber.

Select and use gloves according to AS/NZ 2161.

Respiratory protection

Use a positive pressure supplied-air respirator if there is a potential for over exposure from an uncontrolled release, exposure levels are not known, or under any other circumstances where air-purifying respirators may not provide adequate protection. An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of a full respiratory protection program. Based on the results of the exposure assessment, select from the following respirator type(s) to reduce inhalation exposure:

Half facepiece or full facepiece air-purifying respirator suitable for organic vapours and particulates

For questions about suitability for a specific application, consult with your respirator manufacturer.

Select and use respirators according to AS/NZS 1715. Respirators should comply with AS/NZS 1716 performance specifications. For information about respirators, call 3M on 1800 024 464.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Liquid.
Specific Physical Form:	Viscous. liquid
Appearance/Odour	Viscous amber liquid with mercaptan odour.
Odour threshold	<i>No data available.</i>
pH	<i>Not applicable.</i>
Melting point/Freezing point	<i>Not applicable.</i>
Boiling point/Initial boiling point/Boiling range	>=200 °C
Flash point	Flash point > 93 °C (200 °F)
Evaporation rate	<i>No data available.</i>
Flammability (solid, gas)	Not applicable.
Flammable Limits(LEL)	<i>No data available.</i>
Flammable Limits(UEL)	<i>No data available.</i>
Vapour pressure	<=38.7 Pa [<i>@ 20 °C</i>]
Vapour density	5.7 [<i>@ 20 °C</i>] [<i>Ref Std: AIR=1</i>]
Density	1.15 g/ml
Relative density	1.15 [<i>Ref Std: WATER=1</i>]
Water solubility	Complete
Solubility- non-water	<i>No data available.</i>
Partition coefficient: n-octanol/water	<i>No data available.</i>
Autoignition temperature	<i>Not applicable.</i>
Decomposition temperature	<i>No data available.</i>
Viscosity	2,000 mPa-s - 10,000 mPa-s
Molecular weight	<i>No data available.</i>
Volatile organic compounds (VOC)	34.5 g/l [<i>Test Method: calculated SCAQMD rule 443.1</i>]
Percent volatile	<=3 %
VOC less H2O & exempt solvents	<i>No data available.</i>

SECTION 10: Stability and reactivity**10.1 Reactivity**

This material is considered to be non reactive under normal use conditions

10.2 Chemical stability

Stable.

10.3. Conditions to avoid

None known.

10.4. Possibility of hazardous reactions

Hazardous polymerisation will not occur.

10.5 Incompatible materials

None known.

10.6 Hazardous decomposition products

<u>Substance</u>	<u>Condition</u>
None known.	

Dust created by grinding, sanding, or machining may cause eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

SECTION 11: Toxicological information

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. In addition, toxicological data on ingredients may not be reflected in the material classification and/or the signs and symptoms of exposure, because an ingredient may be present below the threshold for labelling, an ingredient may not be available for exposure, or the data may not be relevant to the material as a whole.

11.1 Information on Toxicological effects

Signs and Symptoms of Exposure

Based on test data and/or information on the components, this material may produce the following health effects:

Inhalation

May cause additional health effects (see below).

Skin contact

May be harmful in contact with skin.

Eye contact

Contact with the eyes during product use is not expected to result in significant irritation.

Ingestion

May be harmful if swallowed.

Gastrointestinal irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhoea. May cause additional health effects (see below).

Additional Health Effects:

Single exposure may cause target organ effects:

Neurological effects: Signs/symptoms may include personality changes, lack of coordination, sensory loss, tingling or numbness of the extremities, weakness, tremors, and changes in blood pressure and heart rate.

Prolonged or repeated exposure may cause target organ effects:

Liver effects: Signs/symptoms may include loss of appetite, weight loss, fatigue, weakness, abdominal tenderness and jaundice.

Reproductive/Developmental Toxicity:

Contains a chemical or chemicals which can cause birth defects or other reproductive harm.

Toxicological Data

If a component is disclosed in section 3 but does not appear in a table below, either no data are available for that endpoint or the data are not sufficient for classification.

Acute Toxicity

Name	Route	Species	Value
Overall product	Dermal		No data available; calculated ATE _{2,000} - 5,000 mg/kg
Overall product	Ingestion		No data available; calculated ATE _{2,000} - 5,000 mg/kg
2-Propenoic Acid, 2-[Methyl[(Nonafluorobutyl)Sulfonyl]Amino]Ethyl Ester, Telomer With Methyloxirane Polymer With Oxirane Di-2-Propenoate and	Dermal	Rat	LD ₅₀ > 2,000 mg/kg

3M™ Fluorosurfactant FC-4430

Methyloxirane Polymer With Oxirane Mono-Propenoate			
2-Propenoic Acid, 2-[Methyl[(Nonafluorobutyl)Sulfonyl]Amino]Ethyl Ester, Telomer With Methyloxirane Polymer With Oxirane Di-2-Propenoate and Methyloxirane Polymer With Oxirane Mono-Propenoate	Ingestion	Rat	LD50 > 2,000 mg/kg
Polyether Polymer	Dermal	Professional judgement	LD50 estimated to be > 5,000 mg/kg
Polyether Polymer	Ingestion	Rat	LD50 5,700 mg/kg
2-Methoxymethylethoxypropanol	Dermal	Rabbit	LD50 > 19,000 mg/kg
2-Methoxymethylethoxypropanol	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 50 mg/l
2-Methoxymethylethoxypropanol	Ingestion	Rat	LD50 5,180 mg/kg
Toluene	Dermal	Rat	LD50 12,000 mg/kg
Toluene	Inhalation-Vapour (4 hours)	Rat	LC50 30 mg/l
Toluene	Ingestion	Rat	LD50 5,550 mg/kg
1,1,2,2,3,3,4,4,4-Nonafluoro-N-(2-hydroxyethyl)-N-methylbutane-1-sulphonamide	Dermal		LD50 estimated to be 2,000 - 5,000 mg/kg
1,1,2,2,3,3,4,4,4-Nonafluoro-N-(2-hydroxyethyl)-N-methylbutane-1-sulphonamide	Ingestion	Rat	LD50 > 2,000 mg/kg
1-butan Sulphonamide, 1,1,2,2,3,3,4,4,4-nonafluoro-N-methyl-	Ingestion	Rat	LD50 200-2000 mg/kg
2-[Methyl[(nonafluorobutyl)sulphonyl]amino]ethyl acrylate	Dermal	Rat	LD50 > 2,000 mg/kg
2-[Methyl[(nonafluorobutyl)sulphonyl]amino]ethyl acrylate	Ingestion	Rat	LD50 > 2,000 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
2-Methoxymethylethoxypropanol	Human and animal	No significant irritation
Toluene	Rabbit	Irritant
1,1,2,2,3,3,4,4,4-Nonafluoro-N-(2-hydroxyethyl)-N-methylbutane-1-sulphonamide	Rabbit	No significant irritation
1-butan Sulphonamide, 1,1,2,2,3,3,4,4,4-nonafluoro-N-methyl-	Rabbit	No significant irritation
2-[Methyl[(nonafluorobutyl)sulphonyl]amino]ethyl acrylate	Rabbit	No significant irritation

Serious Eye Damage/Irritation

Name	Species	Value
2-Methoxymethylethoxypropanol	Rabbit	Mild irritant
Toluene	Rabbit	Moderate irritant
1,1,2,2,3,3,4,4,4-Nonafluoro-N-(2-hydroxyethyl)-N-methylbutane-1-sulphonamide	Rabbit	Mild irritant
1-butan Sulphonamide, 1,1,2,2,3,3,4,4,4-nonafluoro-N-methyl-	Rabbit	Severe irritant
2-[Methyl[(nonafluorobutyl)sulphonyl]amino]ethyl acrylate	Rabbit	Mild irritant

3M™ Fluorosurfactant FC-4430

acrylate		
----------	--	--

Skin Sensitisation

Name	Species	Value
2-Propenoic Acid, 2-[Methyl[(Nonafluorobutyl)Sulfonyl]Amino]Ethyl Ester, Telomer With Methyloxirane Polymer With Oxirane Di-2-Propenoate and Methyloxirane Polymer With Oxirane Mono-Propenoate	Guinea pig	Not classified
2-Methoxymethylethoxypropanol	Human	Not classified
Toluene	Guinea pig	Not classified
1,1,2,2,3,3,4,4,4-Nonafluoro-N-(2-hydroxyethyl)-N-methylbutane-1-sulphonamide	Guinea pig	Not classified
1-butanesulphonamide, 1,1,2,2,3,3,4,4,4-nonafluoro-N-methyl-	Guinea pig	Not classified
2-[Methyl[(nonafluorobutyl)sulphonyl]amino]ethyl acrylate	Guinea pig	Sensitising

Respiratory Sensitisation

For the component/components, either no data are currently available or the data are not sufficient for classification.

Germ Cell Mutagenicity

Name	Route	Value
2-Propenoic Acid, 2-[Methyl[(Nonafluorobutyl)Sulfonyl]Amino]Ethyl Ester, Telomer With Methyloxirane Polymer With Oxirane Di-2-Propenoate and Methyloxirane Polymer With Oxirane Mono-Propenoate	In Vitro	Not mutagenic
2-Methoxymethylethoxypropanol	In Vitro	Not mutagenic
Toluene	In Vitro	Not mutagenic
Toluene	In vivo	Not mutagenic
1,1,2,2,3,3,4,4,4-Nonafluoro-N-(2-hydroxyethyl)-N-methylbutane-1-sulphonamide	In Vitro	Not mutagenic
1-butanesulphonamide, 1,1,2,2,3,3,4,4,4-nonafluoro-N-methyl-	In Vitro	Not mutagenic
2-[Methyl[(nonafluorobutyl)sulphonyl]amino]ethyl acrylate	In Vitro	Not mutagenic

Carcinogenicity

Name	Route	Species	Value
Toluene	Dermal	Mouse	Some positive data exist, but the data are not sufficient for classification
Toluene	Ingestion	Rat	Some positive data exist, but the data are not sufficient for classification
Toluene	Inhalation	Mouse	Some positive data exist, but the data are not sufficient for classification

Reproductive Toxicity**Reproductive and/or Developmental Effects**

Name	Route	Value	Species	Test result	Exposure Duration
2-Methoxymethylethoxypropanol	Inhalation	Not classified for development	Multiple animal species	NOAEL 1.82 mg/l	during organogenesis
Toluene	Inhalation	Not classified for female reproduction	Human	NOAEL Not available	occupational exposure

3M™ Fluorosurfactant FC-4430

Toluene	Inhalation	Not classified for male reproduction	Rat	NOAEL 2.3 mg/l	1 generation
Toluene	Ingestion	Toxic to development	Rat	LOAEL 520 mg/kg/day	during gestation
Toluene	Inhalation	Toxic to development	Human	NOAEL Not available	poisoning and/or abuse
1,1,2,2,3,3,4,4,4-Nonafluoro-N-(2-hydroxyethyl)-N-methylbutane-1-sulphonamide	Ingestion	Not classified for female reproduction	Rat	NOAEL 250 mg/kg/day	premating & during gestation
1,1,2,2,3,3,4,4,4-Nonafluoro-N-(2-hydroxyethyl)-N-methylbutane-1-sulphonamide	Ingestion	Not classified for male reproduction	Rat	NOAEL 250 mg/kg/day	premating & during gestation
1,1,2,2,3,3,4,4,4-Nonafluoro-N-(2-hydroxyethyl)-N-methylbutane-1-sulphonamide	Ingestion	Toxic to development	Rat	NOAEL 50 mg/kg/day	premating & during gestation
1-butanesulphonamide, 1,1,2,2,3,3,4,4,4-nonafluoro-N-methyl-	Ingestion	Toxic to female reproduction	Rat	NOAEL 150 mg/kg/day	premating & during gestation
1-butanesulphonamide, 1,1,2,2,3,3,4,4,4-nonafluoro-N-methyl-	Ingestion	Toxic to male reproduction	Rat	NOAEL 150 mg/kg/day	28 days
1-butanesulphonamide, 1,1,2,2,3,3,4,4,4-nonafluoro-N-methyl-	Ingestion	Toxic to development	Rat	NOAEL 150 mg/kg/day	premating & during gestation

Target Organ(s)
Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
2-Methoxymethylethoxypropyl alcohol	Dermal	central nervous system depression	Not classified	Rabbit	NOAEL 2,850 mg/kg	
2-Methoxymethylethoxypropyl alcohol	Inhalation	central nervous system depression	Not classified	Rat	LOAEL 3.07 mg/l	7 hours
2-Methoxymethylethoxypropyl alcohol	Ingestion	central nervous system depression	Not classified	Rat	LOAEL 5,000 mg/kg	
Toluene	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
Toluene	Inhalation	respiratory irritation	Some positive data exist, but the data are not	Human	NOAEL Not available	

3M™ Fluorosurfactant FC-4430

			sufficient for classification			
Toluene	Inhalation	immune system	Not classified	Mouse	NOAEL 0.004 mg/l	3 hours
Toluene	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	poisoning and/or abuse
1,1,2,2,3,3,4,4,4-Nonafluoro-N-(2-hydroxyethyl)-N-methylbutane-1-sulphonamide	Ingestion	nervous system	May cause damage to organs	Rat	LOAEL 2,000 mg/kg	not applicable
1-butanesulphonamide, 1,1,2,2,3,3,4,4,4-nonafluoro-N-methyl-	Ingestion	nervous system	Not classified	Rat	NOAEL 200 mg/kg	not applicable

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
2-Propenoic Acid, 2-[Methyl[(Nonafluorobutyl)Sulfonyl]Amino]Ethyl Ester, Telomer With Methyloxirane Polymer With Oxirane Di-2-Propenoate and Methyloxirane Polymer With Oxirane Mono-Propenoate	Ingestion	heart endocrine system hematopoietic system liver immune system nervous system kidney and/or bladder respiratory system	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
2-Methoxymethylethoxypropanol	Dermal	kidney and/or bladder heart endocrine system hematopoietic system liver respiratory system	Not classified	Rabbit	NOAEL 9,500 mg/kg/day	90 days
2-Methoxymethylethoxypropanol	Inhalation	heart hematopoietic system liver immune system nervous system eyes kidney and/or bladder	Not classified	Rat	NOAEL 1.21 mg/l	90 days
2-Methoxymeth	Ingestion	liver heart endocrine	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days

3M™ Fluorosurfactant FC-4430

polyethoxypropa nol		system bone, teeth, nails, and/or hair hematopoietic system immune system nervous system kidney and/or bladder respiratory system				
Toluene	Inhalation	auditory system nervous system eyes olfactory system	Causes damage to organs through prolonged or repeated exposure	Human	NOAEL Not available	poisoning and/or abuse
Toluene	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification	Rat	LOAEL 2.3 mg/l	15 months
Toluene	Inhalation	heart liver kidney and/or bladder	Not classified	Rat	NOAEL 11.3 mg/l	15 weeks
Toluene	Inhalation	endocrine system	Not classified	Rat	NOAEL 1.1 mg/l	4 weeks
Toluene	Inhalation	immune system	Not classified	Mouse	NOAEL Not available	20 days
Toluene	Inhalation	bone, teeth, nails, and/or hair	Not classified	Mouse	NOAEL 1.1 mg/l	8 weeks
Toluene	Inhalation	hematopoietic system vascular system	Not classified	Human	NOAEL Not available	occupational exposure
Toluene	Ingestion	nervous system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 625 mg/kg/day	13 weeks
Toluene	Ingestion	heart	Not classified	Rat	NOAEL 2,500 mg/kg/day	13 weeks
Toluene	Ingestion	liver kidney and/or bladder	Not classified	Multiple animal species	NOAEL 2,500 mg/kg/day	13 weeks
Toluene	Ingestion	hematopoietic system	Not classified	Mouse	NOAEL 600 mg/kg/day	14 days
Toluene	Ingestion	endocrine system	Not classified	Mouse	NOAEL 105 mg/kg/day	28 days
Toluene	Ingestion	immune system	Not classified	Mouse	NOAEL 105 mg/kg/day	4 weeks
1,1,2,2,3,3,4,4 ,4- Nonfluoro- N-(2- hydroxyethyl) -N- methylbutane- 1- sulphonamide	Ingestion	liver	May cause damage to organs through prolonged or repeated exposure	Rat	NOAEL 50 mg/kg/day	28 days
1,1,2,2,3,3,4,4 ,4- Nonfluoro- N-(2- hydroxyethyl)	Ingestion	immune system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 50 mg/kg/day	28 days

3M™ Fluorosurfactant FC-4430

-N-methylbutane-1-sulphonamide						
1,1,2,2,3,3,4,4,4-Nonafluoro-N-(2-hydroxyethyl)-N-methylbutane-1-sulphonamide	Ingestion	kidney and/or bladder heart endocrine system hematopoietic system nervous system respiratory system	Not classified	Rat	NOAEL 250 mg/kg/day	28 days
1-butanepulphonamide, 1,1,2,2,3,3,4,4,4-nonafluoro-N-methyl-	Ingestion	nervous system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 150 mg/kg/day	prematuring & during gestation
1-butanepulphonamide, 1,1,2,2,3,3,4,4,4-nonafluoro-N-methyl-	Ingestion	hematopoietic system liver immune system heart endocrine system kidney and/or bladder respiratory system	Not classified	Rat	NOAEL 1,000 mg/kg/day	prematuring & during gestation

Aspiration Hazard

Name	Value
Toluene	Aspiration hazard

Exposure Levels

Refer Section 8.1 Control Parameters of this Safety Data Sheet.

Interactive Effects

Not determined.

SECTION 12: Ecological information

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. Additional information leading to material classification in Section 2 is available upon request. In addition, environmental fate and effects data on ingredients may not be reflected in this section because an ingredient is present below the threshold for labelling, an ingredient is not expected to be available for exposure, or the data is considered not relevant to the material as a whole.

12.1. Toxicity

Acute aquatic hazard:

GHS Acute 2: Toxic to aquatic life.

Chronic aquatic hazard:

GHS Chronic 2: Toxic to aquatic life with long lasting effects.

No product test data available.

Material	CAS Number	Organism	Type	Exposure	Test endpoint	Test result
----------	------------	----------	------	----------	---------------	-------------

3M™ Fluorosurfactant FC-4430

2-Propenoic Acid, 2-[Methyl[(Nonafluorobutyl)Sulfonyl]Amino]Ethyl Ester, Telomer With Methyloxirane Polymer With Oxirane Di-2-Propenoate and Methyloxirane Polymer With Oxirane Mono-Propenoate	1017237-78-3	Copepods	Experimental	48 hours	EC50	132 mg/l
2-Propenoic Acid, 2-[Methyl[(Nonafluorobutyl)Sulfonyl]Amino]Ethyl Ester, Telomer With Methyloxirane Polymer With Oxirane Di-2-Propenoate and Methyloxirane Polymer With Oxirane Mono-Propenoate	1017237-78-3	Water flea	Experimental	48 hours	EC50	99 mg/l
2-Propenoic Acid, 2-[Methyl[(Nonafluorobutyl)Sulfonyl]Amino]Ethyl Ester, Telomer With Methyloxirane Polymer With Oxirane Di-2-Propenoate and Methyloxirane Polymer With Oxirane Mono-Propenoate	1017237-78-3	Fathead minnow	Experimental	96 hours	LC50	765 mg/l
2-Propenoic Acid, 2-[Methyl[(Nonafluorobutyl)Sulfonyl]Amino]Ethyl Ester, Telomer With Methyloxirane Polymer With Oxirane Di-2-Propenoate and	1017237-78-3	Fish	Experimental	96 hours	LC50	>3.2 mg/l

3M™ Fluorosurfactant FC-4430

Methyloxirane Polymer With Oxirane Mono-Propenoate						
2-Propenoic Acid, 2-[Methyl[(Nonafluorobutyl)Sulfonyl]Amino]Ethyl Ester, Telomer With Methyloxirane Polymer With Oxirane Di-2-Propenoate and Methyloxirane Polymer With Oxirane Mono-Propenoate	1017237-78-3	Green algae	Experimental	72 hours	EC50	>1,000 mg/l
2-Propenoic Acid, 2-[Methyl[(Nonafluorobutyl)Sulfonyl]Amino]Ethyl Ester, Telomer With Methyloxirane Polymer With Oxirane Di-2-Propenoate and Methyloxirane Polymer With Oxirane Mono-Propenoate	1017237-78-3	Diatom	Experimental	72 hours	EC50	3.24 mg/l
Polyether Polymer	Trade Secret		Data not available or insufficient for classification			
2-Methoxymethyl ethoxypropanol	34590-94-8	Water flea	Experimental	48 hours	EC50	1,919 mg/l
2-Methoxymethyl ethoxypropanol	34590-94-8	Green Algae	Experimental	72 hours	EC50	>969 mg/l
2-Methoxymethyl ethoxypropanol	34590-94-8	Fathead minnow	Experimental	96 hours	LC50	>10,000 mg/l
2-Methoxymethyl ethoxypropanol	34590-94-8	Green Algae	Experimental	72 hours	Effect Concentration 10%	133 mg/l
1,1,2,2,3,3,4,4,	34454-97-2	Green Algae	Experimental	72 hours	EC50	79 mg/l

3M™ Fluorosurfactant FC-4430

4-Nonafluoro-N-(2-hydroxyethyl)-N-methylbutane-1-sulphonamide						
1,1,2,2,3,3,4,4,4-Nonafluoro-N-(2-hydroxyethyl)-N-methylbutane-1-sulphonamide	34454-97-2	Fathead minnow	Experimental	96 hours	LC50	25 mg/l
1,1,2,2,3,3,4,4,4-Nonafluoro-N-(2-hydroxyethyl)-N-methylbutane-1-sulphonamide	34454-97-2	Crustacea other	Experimental	96 hours	EC50	4.4 mg/l
1,1,2,2,3,3,4,4,4-Nonafluoro-N-(2-hydroxyethyl)-N-methylbutane-1-sulphonamide	34454-97-2	Green Algae	Experimental	72 hours	NOEC	21 mg/l
1-butanesulphonamide, 1,1,2,2,3,3,4,4,4-nonafluoro-N-methyl-	68298-12-4	Mysid Shrimp	Experimental	96 hours	EC50	2.4 mg/l
1-butanesulphonamide, 1,1,2,2,3,3,4,4,4-nonafluoro-N-methyl-	68298-12-4	Green Algae	Experimental	96 hours	EC50	13 mg/l
1-butanesulphonamide, 1,1,2,2,3,3,4,4,4-nonafluoro-N-methyl-	68298-12-4	Fathead minnow	Experimental	96 hours	LC50	44 mg/l
1-butanesulphonamide, 1,1,2,2,3,3,4,4,4-nonafluoro-N-methyl-	68298-12-4	Green Algae	Experimental	96 hours	NOEC	1.9 mg/l

3M™ Fluorosurfactant FC-4430

2-[Methyl[(nonafluorobutyl)sulphonyl]amino]ethyl acrylate	67584-55-8	Water flea	Experimental	48 hours	EC50	1.2 mg/l
2-[Methyl[(nonafluorobutyl)sulphonyl]amino]ethyl acrylate	67584-55-8	Green algae	Experimental	72 hours	NOEC	0.34 mg/l
Toluene	108-88-3	Coho Salmon	Experimental	96 hours	LC50	5.5 mg/l
Toluene	108-88-3	Water flea	Experimental	48 hours	EC50	3.78 mg/l
Toluene	108-88-3	Green Algae	Experimental	72 hours	EC50	12.5 mg/l
Toluene	108-88-3	Fish other	Experimental	96 hours	LC50	6.41 mg/l
Toluene	108-88-3	Water flea	Experimental	7 days	NOEC	0.74 mg/l
Toluene	108-88-3	Coho salmon	Experimental	40 days	NOEC	1.39 mg/l

12.2. Persistence and degradability

Material	CAS Number	Test type	Duration	Study Type	Test result	Protocol
2-Propenoic Acid, 2-[Methyl[(Nonafluorobutyl)Sulfonyl]Amino]Ethyl Ester, Telomer With Methyloxirane Polymer With Oxirane Di-2-Propenoate and Methyloxirane Polymer With Oxirane Mono-Propenoate	1017237-78-3	Experimental Hydrolysis		Hydrolytic half-life	48.5 years (t _{1/2})	Other methods
2-Propenoic Acid, 2-[Methyl[(Nonafluorobutyl)Sulfonyl]Amino]Ethyl Ester, Telomer With Methyloxirane Polymer With Oxirane Di-2-Propenoate and Methyloxirane Polymer With Oxirane Mono-Propenoate	1017237-78-3	Experimental Biodegradation	28 days	BOD	3 % weight	OECD 301D - Closed bottle test
Polyether Polymer	Trade Secret	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
2-	34590-94-8	Experimental	28 days	BOD	75 % weight	OECD 301F -

3M™ Fluorosurfactant FC-4430

Methoxymethyl ethoxypropanol		Biodegradation				Manometric respirometry
1,1,2,2,3,3,4,4,4-Nonafluoro-N-(2-hydroxyethyl)-N-methylbutane-1-sulphonamide	34454-97-2	Experimental Biodegradation	28 days	CO2 evolution	2 % weight	OECD 301B - Modified Sturm or CO2
1-butanesulphonamide, 1,1,2,2,3,3,4,4,4-nonafluoro-N-methyl-	68298-12-4	Estimated Biodegradation	28 days	BOD	0 % weight	Estimated: MITI biodegradability tests
1-butanesulphonamide, 1,1,2,2,3,3,4,4,4-nonafluoro-N-methyl-	68298-12-4	Estimated Photolysis		Photolytic half-life (in air)	25.2 days (t 1/2)	Other methods
2-[Methyl[(nonafluorobutyl)sulphonyl]amino]ethyl acrylate	67584-55-8	Experimental Hydrolysis		Hydrolytic half-life	0.6 years (t 1/2)	Other methods
2-[Methyl[(nonafluorobutyl)sulphonyl]amino]ethyl acrylate	67584-55-8	Experimental Aquatic Biodegrad. - Aerobic	28 days	% CO2 produced	2 % weight	OECD 301B - Modified Sturm or CO2
Toluene	108-88-3	Experimental Biodegradation	20 days	BOD	80 % weight	
Toluene	108-88-3	Experimental Photolysis		Photolytic half-life (in air)	5.2 days (t 1/2)	Other methods

12.3 : Bioaccumulative potential

Material	CAS Number	Test type	Duration	Study Type	Test result	Protocol
2-Propenoic Acid, 2-[Methyl[(Nonafluorobutyl)Sulphonyl]Amino]Ethyl Ester, Telomer With Methyloxirane Polymer With Oxirane Di-2-Propenoate and Methyloxirane Polymer With Oxirane Mono-	1017237-78-3	Data not available or insufficient for classification	N/A	N/A	N/A	N/A

3M™ Fluorosurfactant FC-4430

Propenoate						
Polyether Polymer	Trade Secret	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
2-Methoxymethyl ethoxypropanol	34590-94-8	Experimental Bioconcentration		Log Kow	0.0061	Other methods
1,1,2,2,3,3,4,4,4-Nonafluoro-N-(2-hydroxyethyl)-N-methylbutane-1-sulphonamide	34454-97-2	Estimated Bioconcentration		Log Kow	2.83	Estimated: Bioconcentration factor
1-butanephenylsulfonamide, 1,1,2,2,3,3,4,4,4-nonafluoro-N-methyl-	68298-12-4	Estimated Bioconcentration		Bioaccumulation factor	970	Estimated: Bioconcentration factor
2-[Methyl[(nonafluorobutyl)sulfonyl]amino]ethyl acrylate	67584-55-8	Estimated Bioconcentration		Bioaccumulation factor	5	Other methods
Toluene	108-88-3	Experimental Bioconcentration		Log Kow	2.73	Other methods

12.4. Mobility in soil

Please contact manufacturer for more details

12.5 Other adverse effects

No information available.

SECTION 13: Disposal considerations**13.1. Disposal methods**

Dispose of contents/ container in accordance with the local/regional/national/international regulations.

Incinerate in a permitted waste incineration facility. Proper destruction may require the use of additional fuel during incineration processes. As a disposal alternative, utilize an acceptable permitted waste disposal facility. Combustion products will include HF. Facility must be capable of handling halogenated materials.

SECTION 14: Transport Information**Australian Dangerous Goods Code (ADG) - Road/Rail Transport**

UN No.: UN3082

Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. , (Fluoroacrylate copolymer)

Class/Division: 9

3M™ Fluorosurfactant FC-4430

Sub Risk: Not applicable.

Packing Group: III

Special Instructions: Australian Dangerous Goods Code: Not subject to this code as per Special Provision AU01

Hazchem Code: •3Z

IERG: 47

International Air Transport Association (IATA) - Air Transport

UN No.: UN3082

Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. , (Fluoroacrylate copolymer)

Class/Division: 9

Sub Risk: Not applicable.

Packing Group: III

Special Instructions: Not restricted, as per special provision A197, ENVIRONMENTALLY HAZARDOUS SUBSTANCE EXCEPTION may apply.

International Maritime Dangerous Goods Code (IMDG)- Marine Transport

UN No.: UN3082

Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. , (Fluoroacrylate copolymer)

Class/Division: 9

Sub Risk: Not applicable.

Packing Group: III

Marine Pollutant: Fluoroacrylate copolymer

Special Instructions: Not restricted, as per IMDG CODE 2.10.2.7, MARINE POLLUTANT EXCEPTION, may apply.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Australian Inventory Status:

This product contains a chemical(s) that has been notified to NICNAS and is subject to Secondary Notification requirements. For further information please contact aucorporate.regulatory@mmm.com

Poison Schedule: This product has not been assessed for poisons scheduling as the product is intended for industrial and professional use only.

SECTION 16: Other information

Revision information:

Conversion to GHS format SDS.

DISCLAIMER: The information on this Safety Data Sheet is based on our experience and is correct to the best of our knowledge at the date of publication, but we do not accept any liability for any loss, damage or injury resulting from its use (except as required by law). The information may not be valid for any use not referred to in this Safety Data Sheet or use of the product in combination with other materials. For these reasons, it is important that customers carry out their own test to satisfy themselves as to the suitability of the product for their own intended applications.

Greenguard ® is a United States based program. The 'Low VOC' reference related to United States Federal and State regulations exemptions for some solvents.

3M Australia SDSs are available at www.3m.com.au